



U.S. ENVIRONMENTAL PROTECTION AGENCY  
 Office of Pesticide Programs  
 Biopesticides and Pollution Prevention Division (7511P)  
 1200 Pennsylvania Ave., N.W.  
 Washington, D.C. 20460

EPA Reg. Number:

279-3619

Date of Issuance:

5/17/2018

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
 (under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

F4022-1

Name and Address of Registrant (include ZIP Code):

FMC Corporation  
 2929 Walnut Street  
 Philadelphia, PA 19104

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Biopesticides and Pollution Prevention Division prior to use of the label in commerce. In any correspondence on this product, always refer to the above EPA Registration Number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA or the Act).

Registration is in no way to be construed as an endorsement or recommendation of this product by the U.S. Environmental Protection Agency (EPA). In order to protect health and the environment, the Administrator, on his or her motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under the Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration or registration review of your product when the EPA requires all registrants of similar products to submit such data.

Signature of Approving Official:

ShaRon V. Carlisle, Chief  
 Microbial Pesticides Branch  
 Biopesticides and Pollution Prevention Division (7511P)  
 Office of Pesticide Programs

Date:

5/17/2018

2. Make the following labeling change before you release this product for shipment:
  - Revise the EPA Registration Number to read, “EPA Reg. No. 279-3619.”
3. Submit one (1) copy of the final printed labeling for the record before you release this product for shipment.

Should you wish to add/retain a reference to your company’s website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the EPA. If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements the EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the EPA find or if it is brought to our attention that a website contains statements or claims substantially differing from statements or claims made in connection with obtaining a FIFRA section 3 registration, the website will be referred to the EPA’s Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these terms. If these terms are not complied with, this registration will be subject to cancellation in accordance with FIFRA section 6. A stamped copy of the labeling is enclosed for your records. Please also note that the record for this product currently contains the following acceptable Confidential Statement of Formula (CSF):

- Basic CSF dated 04/20/2018

Any CSFs other than that listed above are superseded.

If you have any questions, please contact Seiichi Murasaki at (703) 347-0163 or [murasaki.seiichi@epa.gov](mailto:murasaki.seiichi@epa.gov).

Enclosure: Stamped Label

**RESTRICTED USE PESTICIDE**

Toxic to fish and aquatic organisms. For retail sale to and use only by certified applicators, or persons under their direct supervision and only for those uses covered by the certified applicator's certification.

<b>GROUP</b>	<b>3A</b>	<b>INSECTICIDE</b>
<b>GROUP</b>	<b>NC</b>	<b>FUNGICIDE</b>

# F4022-1



For mixing directly with liquid fertilizer to control listed soil pests.

EPA Reg. No. 279-GARO

EPA Est. No. \_\_\_\_\_

**Active Ingredient:**

Bifenthrin *:	16.3%
<i>Bacillus licheniformis</i> strain FMCH001**:	1.0%
<b>Other Ingredients:</b>	<b>82.7%</b>
	100.0%

\*Cis isomers 97% minimum, trans isomers 3% maximum

\*\* Contains a minimum of 4.0 x 10<sup>9</sup> colony-forming units (cfu) per milliliter of product

This product contains 1.5 lbs bifenthrin per gallon.

## KEEP OUT OF REACH OF CHILDREN CAUTION

See other panels for additional precautionary information.

FIRST AID	
<b>If Swallowed:</b>	-Call a poison control center or doctor immediately for treatment advice. -Have person sip a glass of water if able to swallow. -Do not induce vomiting unless told to do so by a poison control center or doctor. -Do not give anything by mouth to an unconscious person.
<b>If in Eyes:</b>	-Hold eye open and rinse slowly and gently with water for 15-20 minutes. -Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. -Call a poison control center or doctor for treatment advice.
<b>If on Skin:</b>	-Take off contaminated clothing. -Rinse skin immediately with plenty of water for 15-20 minutes. -Call a poison control center or doctor for treatment advice.
<b>If Inhaled:</b>	- Move person to fresh air. - If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. - Call a poison control center or doctor for treatment advice.
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact <b>1-800-331-3148 twenty-four hours a day seven days a week for emergency medical treatment information.</b>	
NOTE TO PHYSICIAN	
This product contains a pyrethroid. If large amounts have been ingested, the stomach and intestines should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and should be avoided.	

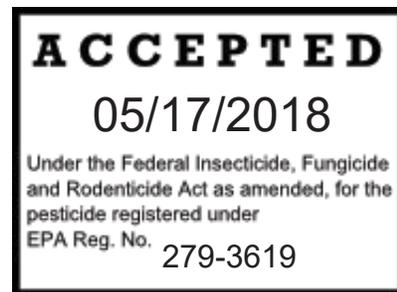
Net Contents: \_\_\_\_\_

**Sold By:**

FMC Corporation  
2929 Walnut Street  
Philadelphia, PA 19104

Batch/Lot code: \_\_\_\_\_

[For nonrefillable containers only. Will be located on this label or on the physical container.]



## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

#### Caution

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing. Prolonged or frequent repeated skin contact may cause allergenic reactions in some individuals. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

**Personal Protective Equipment (PPE):** Mixers and Loaders must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- Protective eyewear
- A NIOSH-approved particulate respirator with any N, R, or P filter with NIOSH approval number prefix TC-84A; or a NIOSH-approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. (Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.)

Applicators and other handlers (other than mixers and loaders) must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- A NIOSH-approved particulate respirator with any N, R, or P filter with NIOSH approval number prefix TC-84A; or a NIOSH-approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. (Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.)

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems or enclosed cabs in a manner that meets requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

#### User Safety Recommendations

##### Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove clothing/PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

#### Environmental Hazards

This pesticide is extremely toxic to fish and aquatic invertebrates. Use with care when applying in areas adjacent to any body of water. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high-water mark. Do not make applications when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are foraging the treatment area.

The use of bifenthrin is prohibited in areas that may result in exposure of endangered species to bifenthrin. Prior to use in a particular county contact the local extension service for procedures and precautions to use to protect endangered species.

## DIRECTIONS FOR USE

### Restricted Use Pesticide

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product through any type of irrigation system.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.

## AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

Exception: If the product is soil-injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: Coveralls, Waterproof gloves, and Shoes plus socks.

## Resistance Management

Some pests are known to develop resistance to pesticides that have been used repeatedly. While the development of pest resistance is well understood, it is not easily predicted. Therefore, pesticides should be used in conjunction with the resistance management strategies in the area. Consult the local or State agricultural advisors for details. If pest resistance should develop in the area, this product used alone may not continue to provide sufficient levels of pest control. If the reduced levels of control cannot be attributed to improper application techniques, improper use rates, improper application timing, unfavorable weather conditions or abnormally high pest pressure, a resistant strain may have developed.

To reduce the potential for pesticide resistance, use this product in a rotation program with other classes of chemistry and modes of action. Always apply this product at the recommended rates and in accordance with the use directions. Do not use less than recommended label rates alone or in tank mixtures. Do not use reduced rates of the tank mix partner. For optimum performance, scout fields carefully and begin applications when pests are smaller rather than larger. If resistance is suspected, contact the local or State agricultural advisors.

## Application and Mixing Instructions

Shake well before using.

F4022-1 is an insecticide/fungicide that contains 1.5 pounds per gallon of the insecticide bifenthrin along with the biopesticide *Bacillus licheniformis* strain FMCH001 at a minimum of  $4.0 \times 10^9$  colony-forming units (cfu) per milliliter. *Bacillus licheniformis* strain FMCH001 is a beneficial bacterium used for suppression of fungal plant diseases. *Bacillus licheniformis* strain FMCH001 also promotes rhizobial activity which increases the establishment, rooting, and growth of plants that can lead to increased yield. F4022-1 can be mixed directly with liquid fertilizer or with water. The rate of application is variable according to pest pressure, timing of treatments and field scouting. Use lower labeled rates under light to moderate pest infestations, and higher labeled rates under heavier pest pressure. In arid climates applications rates are generally higher. Fill the tank one-half full with liquid fertilizer or water and begin spray tank agitation. Add the F4022-1 to the mix tank and then add the rest of the fertilizer or water. Maintain agitation until the mixture has been applied.

Agitate the F4022-1 spray solutions in nurse tanks prior to moving the solution to spray system.

Cultivation within 10 feet of a water body is prohibited to allow for the growth of a vegetated filter strip.

In New York State, this product may not be applied within 100 feet (using ground equipment) to 300 feet (using aerial equipment) of coastal marshes or streams that drain into coastal marshes.

F4022-1 can be applied in-furrow with the seed, as a T-band (band over the open furrow), as pre-plant incorporated and pre-emergent broadcast applications, as a band over the row or as a transplant-water drench during setting. Refer to the individual crop use directions for pest control or suppression instructions.

F4022-1 can be mixed with commonly used liquid starter or pop-up fertilizers. Follow liquid fertilizer recommendations regarding seed safety and use guidelines. Conduct a preliminary jar test using the appropriate ratio of fertilizer and F4022-1. If the tank mixture sets overnight it must be thoroughly agitated prior to application.

## Crop Rotation Restrictions

Crops for which bifenthrin tolerances exist may be rotated at any time. All other crops may be rotated 30 days following the final application of bifenthrin.

## Tank-Mixtures

F4022-1 may be applied in tank mixtures with other products approved for use on registered crops. Observe all restrictions and precautions which appear on the labels of these products. To insure successful applications, product compatibility tests should be conducted.

## Maximum Allowable F4022-1 Use Per Acre Per Season

Refer to the individual crop sections for maximum allowable F4022-1 usage per acre per season. The maximum allowable use for the bifenthrin active ingredient must include all registered use patterns including at-plant, soil applied and/or foliar applications of all bifenthrin containing products for the 12 months period. The 12-month period is to begin upon the initial application to the acre.

## BUFFER ZONES

### Vegetative Buffer Zones

Construct and maintain a minimum 10-foot-wide vegetative filter strip of grass or other permanent vegetation between the field edge and down gradient aquatic habitat (such as, but not limited to, lakes; reservoirs; rivers; permanent streams; marshes or natural ponds; estuaries; and commercial fish farm ponds).

Only apply products containing bifenthrin onto fields where a maintained vegetative buffer strip of at least 10 feet exists between the field and down gradient aquatic habitat.

For guidance, refer to the following publication for information on constructing and maintaining effective buffers: *Conservation Buffers to Reduce Pesticide Losses*. Natural Resources Conservation Services. USDA, NRCS. 2000. Fort Worth, Texas. 21pp.

[http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs143\\_023819.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_023819.pdf)

**Buffer Zone for Ground Application** – Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, marshes, natural ponds, estuaries, and commercial fish ponds).

## Spray Drift Requirements

### Wind Direction and Speed

Only apply this product if the wind direction favors on-target deposition. Do not apply when the wind velocity exceeds 15 mph.

### Temperature Inversion

Do not make applications into temperature inversions. Inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

### Droplet Size

Use only Medium or coarser spray nozzles according to ASAE (S572) definition for standard nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size.

### Additional Requirements for Ground Applications

Wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application.

For ground boom applications, apply using a nozzle height of no more than 4 feet above the ground.

## BRASSICAS, Head and Stem – Crop Subgroup 5A

Including: Broccoli, Chinese broccoli (gailon, white flowering broccoli), Brussels sprouts, Cauliflower, Cavalo broccoli, Kohlrabi, Cabbage, Chinese cabbage (napa), and Chinese mustard cabbage (gai choy)

PEST/DISEASE	USE RATES			DIRECTIONS
	Fluid oz/acre	Fluid oz/1000 Linear ft.*	Pound bifenthrin/acre	
Wireworm Grubs Seedcorn maggot Cabbage maggot Root maggots Root aphids Army cutworm Cutworm species Armyworm species	3.4 - 8.5	0.2 - 0.49	0.04 - 0.1	Apply as a 5 to 7-inch band (T-band) over the open seed furrow, or in-furrow with the seed. Cutworm and armyworm treatments may be applied as broadcast treatments to the soil surface.  <b>At-transplant water treatment application:</b> Apply 5.3 to 8.5 fluid ounces F4022-1 per acre (0.0625 to 0.1 lb bifenthrin active ingredient/A) in a water treatment application volume of 10 to 200 gal/A.
**Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>				**Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.
<b>Restrictions:</b>				
<ul style="list-style-type: none"> <li>Do not apply more than 0.1 pound bifenthrin active ingredient per acre per season as an at-plant application.</li> <li>Do not apply more than 0.5 pound bifenthrin active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.</li> </ul>				

\* Based on 30-inch row spacing

## CILANTRO, CORIANDER

PEST/DISEASE	USE RATES			DIRECTIONS
	Fluid oz/acre	Fluid oz/1000 Linear ft.*	Pound bifenthrin/acre	
Wireworm Armyworm species Cutworm species Flea beetle larvae	3.4 - 6.8	0.2 - 0.39	0.04 - 0.08	Apply as a 5 to 7-inch band over the row on the soil surface, a 5 to 7-inch band over the open furrow (T-band) in-furrow with the seed, or broadcast to the soil surface.
**Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>				**Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.
<b>Restrictions:</b>				
<ul style="list-style-type: none"> <li>Do not apply more than 0.1 pound bifenthrin active ingredient per acre per season as an at-plant application.</li> <li>Do not apply more than 0.5 pound bifenthrin active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.</li> </ul>				

\* Based on 30-inch row spacing

## CITRUS - Crop Group 10-10 (BARE SOIL SURFACE UNDER DRIP LINE)

F4022-1 protects citrus tree roots from Diaprepes and other citrus root weevil feeding by forming a barrier which provides contact activity on newly hatched larvae (neonates). As citrus root weevil eggs hatch in new foliage, neonates fall to the soil surface beneath the tree and come in contact with F4022-1 as they attempt to burrow into the root zone. Disturbance of the soil beneath trees should be minimized.

Timing of F4022-1 applications is critical. Current information suggests that peak emergence of adult Diaprepes Weevil varies by citrus growing region and these emergence peaks can be dramatically affected by environmental factors, such as soil moisture. Typically, two peaks are observed for Diaprepes, first in spring then late summer or early fall. Southern Blue- Green and Blue-Green Citrus Weevils and Fuller Rose Beetle typically exhibit a single emergence peak in the spring. Brown and Little Leaf Notchers typically exhibit three emergence peaks, spring, summer and fall. Since emergence varies seasonally and by location, timing of F4022-1 application can be accurately forecast by observing adults. Adults are most active early morning and late afternoon; numbers can be estimated by trapping throughout spring and summer (emergence periods). Egg laying will occur for 8 to 10 weeks following adult emergence from the soil; larval invasion of the soil will begin 2 to 3 weeks following adult emergence. It is critical to have the F4022-1 soil barrier in place prior to drop of the neonates.

F4022-1 is one of several effective tools in an integrated pest management program for Citrus Root Weevils. Application of F4022-1 should be used in conjunction with good cultural practices, biological control of larvae and foliar control of adults. Consult local university extension personnel for current information to protect citrus trees from Citrus Root Weevils and other pests.

Apply to individual citrus resets, when not in solid planted rows, using hand-gun or shielded sprayer.

Peak emergence of Diaprepes root weevil generally occurs in the spring. Depending on weather conditions, a minor emergence of Diaprepes root weevil may also occur in the fall.

If the citrus grove to be treated is in an area where weather conditions are conducive to primary emergence occurring in the spring, 42.5 fluid ounces formulated product should be used to obtain the longest residual management of Diaprepes root weevil. If the citrus grove to be treated is in an area where weather conditions will promote more than one peak of pest emergence, 21.25 fluid ounces formulated product can be applied early season and 21.25 fluid ounces formulated product can be applied later in the season.

PEST	USE RATES		DIRECTIONS
	Fluid oz/acre	Pound bifenthrin/acre	
Asian cockroach ( <i>Blattella asahinae</i> )	8.5 - 21.25	0.1 - 0.25	Apply F4022-1 by ground equipment to bare soil beneath citrus trees. F4022-1 must be uniformly applied from the trunk to the drip line of tree.
Diaprepes Root Weevil ( <i>Diaprepes abbreviatus</i> ) Southern Blue Green Citrus Root Weevil ( <i>Pachnaeus litus</i> ) Blue Green Citrus Root Weevil ( <i>Pachnaeus opalus</i> ) Brown Leaf Notcher ( <i>Epicaerus mexicanus</i> ) Little Leaf Notcher ( <i>Artipus floridanus</i> ) Fuller Rose Beetle ( <i>Asynonychus godmani</i> )	21.25- 42.5	0.25 - 0.5	Apply in a minimum of 40 gallons of finished spray per acre.  Greater spray volume should insure greater uniformity of coverage. A pre- and post-application irrigation may aid in the uniformity of coverage as well.
<b>Restrictions:</b>			
<ul style="list-style-type: none"> <li>• Do not apply through irrigation systems.</li> <li>• Do not allow any application of F4022-1 to contact fruit or foliage.</li> <li>• Do not apply more than a total of 42.5 fluid ounces of formulated product (0.5 pound bifenthrin active ingredient) per acre per year.</li> <li>• Do not apply by air.</li> </ul>			

## CORN (AT PLANT)

Field Corn, Popcorn, Field Corn Grown for Seed, Sweet Corn, Sweet Corn Grown for Seed

PEST/DISEASE	USE RATES			DIRECTIONS
	Fluid oz/acre*	Fluid oz/1000 Linear ft.	Pound bifenthrin/acre	
Corn rootworm larvae (Northern, Southern and Western)	8.0 – 17.0	0.46 - 0.98	0.09 - 0.2	Apply as a 5 to 7-inch band (T-band) over an open furrow, or in-furrow with the seed.
Wireworm Grape colaspis Grubs Seedcorn maggot Root aphids Army cutworm Cutworm species True armyworm Armyworm species Stalkborer Seed corn beetle Sugarcane beetle	3.4 – 17.0	0.2 - 0.98	0.04 - 0.2	For Army cutworm, Stalkborer, Cutworm species, True armyworm or Armyworm species, apply as a 5 to 7-inch band over the row on the soil surface, a 5 to 7-inch band over the open furrow (T-band), in-furrow with the seed, or broadcast to the soil surface.  **Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.
**Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>				Heavy Corn Rootworm Pressure Management Program: In areas where large corn rootworm populations are present, a multi-approach system may be needed for optimal pest management. However, if the population level is not known and if a corn rootworm adult scouting program along with threshold adult control measures were not completed during the previous growing season, then utilize a maximum dosage seed treatment program or genetically modified corn rootworm resistant hybrid in addition to F4022-1.

### Restrictions:

- Do not apply more than 0.2 pound bifenthrin active per acre per season as an at-plant application.
- For field corn:** Do not apply more than 0.3 pound bifenthrin active ingredient per acre per season including ppi, at-plant, pre-emergence, and foliar applications of other bifenthrin products.
- For sweet corn:** Do not apply more than 0.2 pound bifenthrin active ingredient per acre total per season including ppi, at-plant, pre-emergence, and foliar applications of other bifenthrin products.

\* Based on 30-inch row spacing

F4022-1 Required Per Acre for Various Row Spacings					
Row Spacing	36"	30"	20"	15"	Twin Row 30" centers
Linear row ft/acre	14,520 ft	17,424 ft	26,136 ft	34,848 ft	34,848 ft
<b>Conversion</b>					
0.19 Fluid oz/1000 Linear ft =	2.8 fl oz/acre	3.3 fl oz/acre	5.0 fl oz/acre	6.6 fl oz/acre	6.6 fl oz/acre
0.23 Fluid oz/1000 Linear ft =	3.4 fl oz/acre	4.0 fl oz/acre	6.0 fl oz/acre	8.0 fl oz/acre	8.0 fl oz/acre
0.31 Fluid oz/1000 Linear ft =	4.5 fl oz/acre	5.4 fl oz/acre	8.1 fl oz/acre	10.8 fl oz/acre	10.8 fl oz/acre
0.46 Fluid oz/1000 Linear ft =	6.7 fl oz/acre	8.0 fl oz/acre	12.0 fl oz/acre	16.0 fl oz/acre	16.0 fl oz/acre
0.55 Fluid oz/1000 Linear ft =	8.0 fl oz/acre	9.6 fl oz/acre	14.4 fl oz/acre		
0.67 Fluid oz/1000 Linear ft =	9.7 fl oz/acre	11.7 fl oz/acre			
0.80 Fluid oz/1000 Linear ft =	11.6 fl oz/acre	13.9 fl oz/acre			
0.92 Fluid oz/1000 Linear ft =	13.4 fl oz/acre	16.0 fl oz/acre			
1.38 Fluid oz/1000 Linear ft =	20.0 fl oz/acre	24.0 fl oz/acre			

Rates less than the equivalent of 8.0 fl oz/A at 30" row spacing may not provide adequate control of corn rootworm.

## CORN (PRE & PPI)

Field Corn, Popcorn, Field Corn Grown for Seed, Sweet Corn, Sweet Corn Grown for Seed

PEST/DISEASE	USE RATES		DIRECTIONS
	Fluid oz/acre	Pound bifenthrin/acre	
Black Cutworm Grape colaspis White Grub Wireworm Seedcorn Maggot Armyworm species Seed corn beetle	4 to 5.3 Pre-Plant Incorporated (PPI)	0.047 to 0.062 Pre-Plant Incorporated (PPI)	F4022-1 can be tank mixed and applied with PPI herbicides. Incorporation of F4022-1 should not be any deeper than the intended planting depth and no deeper than 3 inches. Incorporation depth should be close to the intended seed planting depth.
Black Cutworm Armyworm species Stalkborer Seed corn beetle	3.4 Pre-Emergence (PRE)	0.04 Pre-Emergence (PRE)	F4022-1 can be tank mixed and applied with PRE herbicides
*Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>	3.4 to 5.3 (PPI and PRE)	0.04 to 0.062 (PPI and PRE)	*Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>For field corn: Do not apply more than 0.3 pound bifenthrin active ingredient per acre total per season including ppi, at-plant, pre-emergence, and foliar applications of other bifenthrin products.</li> <li>For sweet corn: Do not apply more than 0.2 pound bifenthrin active ingredient per acre total per season including ppi, at-plant, pre-emergence, and foliar applications of other bifenthrin products.</li> </ul>			

## CUCURBIT - Crop Group 9

Including: Chayote (fruit), Chinese waxgourd (Chinese preserving melon), Citron melon, Cucumber, Gherkin, Gourd, edible *Lagenaria* species (includes hyotan, cucuzza), *Luffa* species (includes hechima, Chinese okra), *Momordica* species (includes balsam apple, balsam pear, bitter melon, Chinese cucumber), Muskmelon (hybrids and/or cultivars of *Cucumis melo*) (includes true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, and snake melon), Pumpkin (*Cucurbita* species), Squash, summer (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini), Squash, winter (includes butternut squash, calabaza, hubbard squash (*C. mixta*; *C. pepo*) includes acorn squash, spaghetti squash), Watermelon (includes hybrids and/or varieties of *Citrullus* species).

PEST/DISEASE	USE RATES			DIRECTIONS
	Fluid oz/acre	Fluid oz/1000 Linear ft.*	Pound bifenthrin/acre	
Cucumber beetle larvae	6.8 - 8.5	0.39 - 0.49	0.08 - 0.1	To control cucumber beetle larvae, apply as a 5 to 7-inch band over an open furrow (T-band), or in-furrow with the seed.
Wireworm Grubs Flea beetle larvae Army cutworm Cutworm species True armyworm Armyworm species	3.4 - 8.5	0.2 - 0.49	0.04 - 0.1	To control wireworm, grubs, and flea beetle larvae, apply as a 5 to 7-inch band over an open furrow (T-band), or in-furrow with the seed or transplant
**Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>				To control army cutworm, cutworm species, true armyworm and armyworm species, apply as a 5 to 7-inch band over the row on the soil surface, a 5 to 7-inch band over the open furrow (T-band), in-furrow with the seed, broadcast to the soil surface or banded over the row.  <b>At-transplant water treatment application:</b> Apply 6.8 to 8.5 fluid ounces F4022-1 per acre (0.08 to 0.1 lb bifenthrin active ingredient/A) in a water treatment application volume of 10 to 200 gal/A.  **Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.

**Restrictions:**

- Do not apply more than 0.1 pound bifenthrin active ingredient per acre per season as an at-plant application.
- Do not apply more than 0.3 pound bifenthrin active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.

\* Based on 30-inch row spacing

**DRIED BEANS AND PEAS – Crop Subgroup 6C, except soybean**

Including dried cultivars of: Bean (*Lupinus*); Bean (*Phaseolus*), Field bean, Kidney bean, Lima bean (dry), Navy bean, Pinto bean, Tepary bean; Bean (*Vigna*), Adzuki bean, Blackeyed pea, Catjang, Cowpea, Crowder pea, Moth bean, Mung bean, Rice bean, Southern pea, Urd bean; Broad bean (dry), Chickpea, Guar, Lablab bean, Lentil; Pea (*Pisum*), Field pea, Pigeon pea.

PEST/DISEASE	USE RATES			DIRECTIONS
	Fluid oz/acre	Fluid oz/1000 Linear ft.*	Pound bifenthrin/acre	
Grape colaspis Wireworm Grubs Root maggot Army cutworm Cutworm species True armyworm Armyworm species	3.4 - 8.5	0.2 - 0.49	0.04 - 0.1	Apply as a 5 to 7-inch band over the row on the soil surface, 5 to 7-inch band (T-band) over an open furrow, or in-furrow with the seed. Apply broadcast to the soil surface for control of Army cutworm, Cutworm species, True armyworm, or Armyworm species  **Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.
**Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>				
<b>Restrictions:</b>				
<ul style="list-style-type: none"> <li>• Do not apply more than 0.1 pound bifenthrin active ingredient per acre per season as an at-plant application.</li> <li>• Do not apply more than 0.2 pound bifenthrin active ingredient per acre per season to peas or 0.3 pound bifenthrin active ingredient per acre per season to beans including at-plant plus foliar applications of other bifenthrin products.</li> </ul>				

\* Based on 30-inch row spacing

**EGGPLANT**

PEST/DISEASE	USE RATES			DIRECTIONS
	Fluid oz/acre	Fluid oz/1000 Linear ft.*	Pound bifenthrin/acre	
Wireworm Grubs Root maggot Army cutworm Cutworm species True armyworm Armyworm species	3.4 - 8.5	0.2 - 0.49	0.04 - 0.1	Apply as a 5 to 7-inch band over the row on the soil surface, a 5 to 7-inch band over the open furrow (T-band), or in-furrow with the seed. Apply broadcast to the soil surface for control of Army Cutworm, Cutworm Species, True Armyworm or Armyworm species.  <b>At-transplant water treatment application:</b> Apply 5.3 to 8.5 fluid ounces F4022-1 per acre (0.0625 to 0.1 lb bifenthrin active ingredient/A) in a water treatment application volume of 10 to 200 gal/A.  **Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.
**Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>				
<b>Restrictions:</b>				
<ul style="list-style-type: none"> <li>• Do not apply more than 0.1 pound bifenthrin active ingredient per acre per season as an at-plant application.</li> <li>• Do not apply more than 0.2 pound bifenthrin active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.</li> </ul>				

\* Based on 30-inch row spacing

## HEAD LETTUCE

PEST/DISEASE	USE RATES			DIRECTIONS
	Fluid oz/acre	Fluid oz/1000 Linear ft.*	Pound bifenthrin/acre	
Wireworm Grubs Root maggot Lettuce root aphid Army cutworm Cutworm species True armyworm Armyworm species Bulb mites	3.4 - 8.5	0.2 - 0.49	0.04 - 0.1	<p>Apply as a 5 to 7-inch band over the row on the soil surface, a 5 to 7-inch band over the open furrow (T-band), or in-furrow with the seed. Apply broadcast to the soil surface for control of Army cutworm, Cutworm species, True armyworm, armyworm species or bulb mites.</p> <p><b>At-transplant water treatment application:</b> Apply 5.3 to 8.5 fluid ounces F4022-1 per acre (0.0625 to 0.1 lb bifenthrin active ingredient/A) in a water treatment application volume of 10 to 200 gal/A.</p> <p>**Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.</p>
**Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>				
<p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>Do not apply more than 0.1 pound bifenthrin active ingredient per acre per season as an at-plant application.</li> <li>Do not apply more than 0.5 pound bifenthrin active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.</li> </ul>				

\* Based on 30-inch row spacing

## LEAFY BRASSICA GREENS – Crop Subgroup 5B and TURNIP GREENS

Including: Broccoli Raab, Bok Choy, Collards, Kale, Mizuna, Mustard Greens, Mustard Spinach, Rape Greens, Turnip Greens

PEST/DISEASE	USE RATES			DIRECTIONS
	Fluid oz/acre	Fluid oz/1000 Linear ft.*	Pound bifenthrin/acre	
Wireworm Grubs Root maggot Lettuce root aphid Army cutworm Cutworm species True armyworm Armyworm species	3.4 - 8.5	0.2 - 0.49	0.04 - 0.1	<p>Apply as a 5 to 7-inch band over the row on the soil surface, a 5 to 7-inch band over the open furrow (T-band), or in-furrow with the seed. Apply broadcast over the soil surface for control of Army cutworm, Cutworm species, True armyworm or armyworm species</p> <p><b>At-transplant water treatment application:</b> Apply 5.3 to 8.5 fluid ounces F4022-1 per acre (0.0625 to 0.1 lb bifenthrin active ingredient/A) in a water treatment application volume of 10 to 200 gal/A.</p> <p>**Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.</p>
**Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>				
<p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>Do not apply more than 0.1 pound bifenthrin active ingredient per acre per season as an at-plant application.</li> <li>Do not apply more than 0.4 pound bifenthrin active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.</li> </ul>				

\* Based on 30-inch row spacing

## OKRA

PEST/DISEASE	USE RATES			DIRECTIONS
	Fluid oz/acre	Fluid oz/1000 Linear ft.*	Pound bifenthrin/acre	
Wireworm Armyworm Cutworm Flea beetle larvae	3.4 - 6.8	0.2 - 0.39	0.04 - 0.08	Apply as a 5 to 7-inch band over the row on the soil surface, a 5 to 7-inch band over the open furrow (T-band), in-furrow with the seed, or broadcast to the soil surface.  **Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.
**Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>				
<b>Restrictions:</b>				
<ul style="list-style-type: none"> <li>Do not apply more than 0.1 pound bifenthrin active ingredient per acre per season as an at-plant application.</li> <li>Do not apply more than 0.2 pound bifenthrin active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.</li> </ul>				

\* Based on 30-inch row spacing

## PEPPERS (BELL and NON-BELL)

PEST/DISEASE	USE RATES			DIRECTIONS
	Fluid oz/acre	Fluid oz/1000 Linear ft.*	Pound bifenthrin/acre	
Wireworm Grubs Root maggot Flea beetle larvae Pepper maggot Root aphid Army cutworm Cutworm species True armyworm Armyworm species Stalk borer	3.4 - 8.5	0.2 - 0.49	0.04 - 0.1	Apply as a 5 to 7-inch band over the row on the soil surface, a 5 to 7-inch band over the open furrow (T-band), or in-furrow with the seed. Apply broadcast over the soil surface for control of Army cutworm, Cutworm species, True armyworm, Armyworm species or Stalk borer.  <b>At-transplant water treatment application:</b> Apply 5.3 to 8.5 fluid ounces F4022-1 per acre (0.0625 to 0.1 lb bifenthrin active ingredient/A) in a water treatment application volume of 10 to 200 gal/A.  **Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.
**Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>				
<b>Restrictions:</b>				
<ul style="list-style-type: none"> <li>Do not apply more than 0.1 pound bifenthrin active ingredient per acre per season as an at-plant application.</li> <li>Do not apply more than 0.2 pound bifenthrin active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.</li> </ul>				

\* Based on 30-inch row spacing

## SOYBEANS

PEST/DISEASE	USE RATES			DIRECTIONS
	Fluid oz/acre	Fluid oz/1000 Linear ft.*	Pound bifenthrin/acre	
Rootworm larvae	6.8 - 8.5	0.39 - 0.49	0.08 - 0.1	Apply as a 5 to 7-inch band over the row on the soil surface, a 5 to 7-inch band over the open furrow (T-band), or in-furrow with the seed. Apply broadcast over the soil surface for control of Army cutworm, Cutworm species, True armyworm, or Armyworm species  **Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.
Wireworm Grape colaspis Grubs Root maggot Seedcorn maggot Army cutworm Cutworm species True armyworm Armyworm species Seed corn beetle	3.4 - 8.5	0.2 - 0.49	0.04 - 0.1	
**Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>				
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>Do not apply more than 0.1 pound bifenthrin active ingredient per acre per season as an at-plant application.</li> <li>Do not apply more than 0.2 pound bifenthrin active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.</li> </ul>				

\* Based on 30-inch row spacing

## SOYBEANS (PPI & PRE)

PEST/DISEASE	USE RATES		DIRECTIONS
	Fluid oz/acre	Pound bifenthrin/acre	
Black Cutworm White Grub Wireworm Seedcorn Maggot Armyworm species Seed corn beetle	4 to 5.3 Pre-Plant Incorporated (PPI)	0.047 to 0.062 Pre-Plant Incorporated (PPI)	F4022-1 can be tank mixed and applied with PPI herbicides. Incorporation of F4022-1 should not be any deeper than the intended planting depth and no deeper than 3 inches. Incorporation depth should be close to the intended seed planting depth.
Black Cutworm Armyworm species Stalkborer Seed corn beetle	3.4 Pre-Emergence (PRE)	0.04 Pre-Emergence (PRE)	F4022-1 may be applied and can be tank mixed and applied with PRE herbicides
*Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>	3.4 to 5.3 (PPI and PRE)	0.04 to 0.062 (PPI and PRE)	*Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>Do not apply more than 0.1 pound bifenthrin active ingredient per acre per season as PPI or PRE application.</li> <li>Do not apply more than 0.2 pound bifenthrin active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.</li> </ul>			

## SPINACH

PEST/DISEASE	USE RATES			DIRECTIONS
	Fluid oz/acre	Fluid oz/1000 Linear ft.*	Pound bifenthrin/acre	
Wireworm Grubs Root maggot Seedcorn maggot Army cutworm Cutworm species True armyworm Armyworm species	3.4 - 8.5	0.2 - 0.49	0.04 - 0.1	Apply as a 5 to 7-inch band over the row on the soil surface, a 5 to 7-inch band over the open furrow (T-band), or in-furrow with the seed. Apply broadcast to the soil surface for control of Army cutworm, Cutworm species, True armyworm, or Armyworm species  **Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.
**Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>				
<b>Restrictions:</b>				
<ul style="list-style-type: none"> <li>Do not apply more than 0.1 pound bifenthrin active ingredient per acre per season as an at-plant application.</li> <li>Do not apply more than 0.4 pound bifenthrin active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.</li> </ul>				

\* Based on 30-inch row spacing

## EDIBLE-PODDED and SUCCULENT PEAS AND BEANS – Crop Subgroups 6A and 6B

Includes: Pea (*Pisum* species): Dwarf pea, Edible-pod pea, English pea, Garden pea, Green pea, Snow pea, Sugar snap pea, Pigeon pea; Bean (*Phaseolus* species): Broadbean (succulent), Lima bean (green), Runner bean, Snap bean, Wax bean; Bean, *Vigna* species): Asparagus bean, Blackeyed pea, Chinese longbean, Cowpea, Moth bean, Southern pea, Yardlong bean, Jackbean, Soybean (immature seed), Sword bean

PEST/DISEASE	USE RATES			DIRECTIONS
	Fluid oz/acre	Fluid oz/1000 Linear ft.*	Pound bifenthrin/acre	
Wireworm Grape colaspis Grubs Root maggot Seedcorn maggot Army cutworm Cutworm species True armyworm Armyworm species	3.4 - 8.5	0.2 - 0.49	0.04 - 0.1	Apply as a 5 to 7-inch band over the row on the soil surface, a 5 to 7-inch band over the open furrow (T-band), or in-furrow with the seed. Apply broadcast over the soil surface for control of Army cutworm, Cutworm species, True armyworm, or Armyworm species  **Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.
**Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>				
<b>Restrictions:</b>				
<ul style="list-style-type: none"> <li>Do not apply more than 0.1 pound bifenthrin active ingredient per acre per season as an at-plant application.</li> <li>Do not apply more than 0.2 pound bifenthrin active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products</li> </ul>				

\* Based on 30-inch row spacing

## TOBACCO (PRE-TRANSPLANT and AT-TRANSPLANT)

PEST/DISEASE	USE RATES			DIRECTIONS
	Fluid oz/acre	Fluid oz/1000 Linear ft.*	Pound bifenthrin/acre	
Cutworm species Flea beetle larvae White grubs Wireworm Mole cricket Armyworm species Stalkborer	3.4 – 8.5	0.2 - 0.49	0.04 - 0.1	<p><b>Pre-transplant soil applications:</b> Use of suitable equipment to incorporate into top 4" of the soil is required to control below ground pests.</p> <p><b>At-transplant water treatment application:</b> Apply 5.3 to 8.5 fluid ounces F4022-1 per acre (0.0625 to 0.1 lb bifenthrin active ingredient/A) in a water treatment application volume of 10 to 200 gal/A.</p> <p>**Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.</p> <p>May be tank mixed with Command, Spartan and other herbicides approved for tobacco use.</p>
**Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>				
<p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>Do not apply more than 0.2 pound bifenthrin active ingredient per acre per season.</li> <li>Do not apply later than lay-by</li> </ul>				

\* Based on 30-inch row spacing

## TOMATO

PEST/DISEASE	USE RATES			DIRECTIONS
	Fluid oz/acre	Fluid oz/1000 Linear ft.*	Pound bifenthrin/acre	
Wireworm Grubs Root maggot Flea beetle larvae Army cutworm Cutworm species True armyworm Armyworm species Stalkborer	3.4 - 8.5	0.2 - 0.49	0.04 - 0.1	<p>Apply as a 5 to 7-inch band over the row on the soil surface, a 5 to 7-inch band over the open furrow (T-band), or in-furrow with the seed. Apply broadcast to the soil surface for control of Army cutworm, Cutworm species, True armyworm, Armyworm species or Stalkborer.</p> <p><b>At-transplant water treatment application:</b> Apply 5.3 to 8.5 fluid ounces F4022-1 per acre (0.0625 to 0.1 lb bifenthrin active ingredient/A) in a water treatment application volume of 10 to 200 gal/A.</p> <p>**Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.</p>
**Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>				
<p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>Do not apply more than 0.1 pound bifenthrin active ingredient per acre per season as an at-plant application.</li> <li>Do not apply more than 0.32 pound bifenthrin active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.</li> </ul>				

\* Based on 30-inch row spacing

**TUBEROUS AND CORM VEGETABLES – Crop Subgroup 1C (AT-PLANT)**

Potato, Sweet potato, Arracacha, Arrowroot, Chinese artichoke, Jerusalem artichoke, Edible canna, Cassava (bitter and sweet), Chayote (root), Chufa, Dasheen (taro), Ginger, Leren, Tanier, Turner, Yam bean, True yam

PEST/DISEASE	USE RATES		DIRECTIONS
	Fluid oz/acre	Pound bifenthrin/acre	
Wireworms Grape colaspis White grub Sweet potato flea beetle Rootworms	12.75 - 25.5	0.15 - 0.3	F4022-1 may be applied as a soil incorporated broadcast, directed bed spray or a T-band spray into the planting furrow for the control of wireworms, rootworms, sweet potato flea beetle and white grubs. Apply in a minimum of 10 gallons per acre of spray.
*Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>			*Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance.
<b>Restrictions:</b>			
<ul style="list-style-type: none"> <li>Do not apply more than 0.3 pound bifenthrin active ingredient per acre per season as an at-plant application.</li> <li>Do not apply more than 0.5 pound bifenthrin active ingredient per acre per season including at-plant plus foliar applications of other bifenthrin products.</li> </ul>			

**TUBEROUS AND CORM VEGETABLES – Crop Subgroup 1C (LAY-BY)**

Potato, Sweet potato, Arracacha, Arrowroot, Chinese artichoke, Jerusalem artichoke, Edible canna, Cassava (bitter and sweet), Chayote (root), Chufa, Dasheen (taro), Ginger, Leren, Tanier, Turner, Yam bean, True yam

PEST/DISEASE	USE RATES		DIRECTIONS
	Fluid oz/acre	Pound bifenthrin/acre	
Wireworms Grape colaspis White grub Rootworms	12.75 - 25.5	0.15 - 0.3	F4022-1 may be applied as one or more soil directed and incorporated treatments at cultivation or lay-by for the control of wireworms, rootworms and white grubs. Apply F4022-1 to the drill area and incorporate by cultivation equipment set to throw soil towards the drill area. Apply in a minimum of 10 gallons per acre of spray.
*Suppression of "Damping off," seedling blights, and root or crown diseases caused by <i>Pythium</i> , <i>Rhizoctonia</i> , <i>Fusarium</i> , or <i>Phytophthora</i>			*Use highest application rate for better disease management, however, under moderate to severe disease pressure, or when environmental conditions and plant stage are conducive to rapid disease development, mix F4022-1 with other fungicides for improved performance
<b>Restrictions:</b>			
<ul style="list-style-type: none"> <li>Do not apply more than 0.5 pound bifenthrin active ingredient per acre per season including soil plus foliar applications of other bifenthrin products.</li> </ul>			

## STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

### Pesticide Storage

Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. Do not freeze. Open containers carefully. After partial use, replace lid and close tightly. Do not put concentrate or dilute material into food or drink containers. In case of spill, avoid contact, isolate area, and keep out animals and unprotected persons. Confine spills. To confine spill, dike surrounding area or absorb with sand, cat litter or commercial clay. You may call CHEMTREC (Transportation and Spills) at 800-424-9300. Place damaged package in a holding container. If a leaky container must be contained within another, mark the outer container to identify the contents.

### Pesticide Disposal

To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

### Container Handling

**U-Turn® Container:** Do not rinse container. Do not empty remaining formulated product. Do not break seals. Return intact to point of purchase.

**Nonrefillable Plastic Containers (Containers equal to or less than 5 gallons): Nonrefillable container.** Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill or by incineration.

**Nonrefillable Plastic Containers (Containers greater than 5 gallons): Nonrefillable container.** Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip back and forth several times. Turn the container over onto its other end and tip back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available, or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill or by incineration.

**Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or a mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available, or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill or by incineration.

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